ACZ Laboratories, Inc.
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Revised Analytical Report

July 06, 2020

Report to:
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Wood - E&I Solutions, Inc.
10940 White Rock Road
Suite 190
Rancho Cordova, CA 95670

Bill to:
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10940 White Rock Rd
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Rancho Cordova, CA 95670

Project ID:
ACZ Project ID: L57102

Lynda Lombardi:

Enclosed are revised analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on January 27, 2020 and originally reported on February 17, 2020. Refer to the case narrative for an explanation of the changes. This project was assigned to ACZ's project number, L57102. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L57102. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after March 18, 2020. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

Wood - EI Solutions, Inc. July 06, 2020

Project ID:
ACZ Project ID: L57102

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 10 miscellaneous samples from Wood - E&I Solutions, Inc. on January 27, 2020. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L57102. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports.

This report was revised on 07/06/2020 to report corrected sulfur forms data and to add additional calculations per Nevada regulations. No other changes were made.

Wood - E&I Solutions, Inc.
Project ID:
Sample ID: WRSB206_65-75

ACZ Sample ID: ***L57102-01***
Date Sampled: *01/21/20 13:42*
Date Received: *01/27/20*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		1.25	B		t CaCO3/Kt	0.31	3.1	07/06/20 0:00	calc
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		1.25	B		t CaCO3/Kt	0.31	3.1	07/06/20 0:00	calc
Acid Neutralization Potential (calc)	M600/2-78-054 3.2.3 NV Modified Sobek Procedure		10			t CaCO3/Kt	1	5	07/06/20 0:00	calc
ANP to AGP Ratio (calc)	M600/2-78-054 NV Modified Sobek Procedure		8			t CaCO3/Kt			07/06/20 0:00	calc
Net Acid Generation Procedure	Sequential NAG - EGI 2002									
NAG		1	1		*	Kg H2SO4/t	1	1	02/13/20 0:00	jms
pH After Oxidation		1	6.4		*	units	0.1	0.1	02/13/20 0:00	jms
Net Neutralization Potential - NV Mod	M600/2-78-054 NV Modified Sobek Procedure		8.75			t CaCO3/Kt			07/06/20 0:00	calc
Neutralization Potential as CaCO3	M600/2-78-054 NV Modified Sobek Procedure	1	1.0		*	%	0.1	0.5	02/14/20 11:33	nnk
Potential Acid Generating Sulfur	M600/2-78-054 NV Modified Sobek Procedure		0.01			%	0.01	0.1	07/06/20 0:00	calc
Sulfur Forms	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc									
H2O-Soluble Sulfate		1	0.01	B	*	%	0.01	0.1	02/12/20 0:00	llr
HCl Rinse Residue		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
HNO3 Rinse Residue		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Hot Water Rinse Residue		1	0.03	B	*	%	0.01	0.1	02/12/20 0:00	llr
Non-Extractable Sulfur		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Non-H2O Sulfate Sulfur		1	0.03	B	*	%	0.01	0.1	02/12/20 0:00	llr
Pyritic Sulfur		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Total Sulfur		1	0.04	B	*	%	0.01	0.1	02/12/20 0:00	llr

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				01/28/20 16:50	nnk
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				02/10/20 14:20	jms

Wood - E&I Solutions, Inc.
Project ID:
Sample ID: WRSB206_105-115

ACZ Sample ID: ***L57102-02***
Date Sampled: *01/21/20 15:06*
Date Received: *01/27/20*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		0.31	B		t CaCO3/Kt	0.31	3.1	07/06/20 0:00	calc
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		0.31	B		t CaCO3/Kt	0.31	3.1	07/06/20 0:00	calc
Acid Neutralization Potential (calc)	M600/2-78-054 3.2.3 NV Modified Sobek Procedure		13			t CaCO3/Kt	1	5	07/06/20 0:00	calc
ANP to AGP Ratio (calc)	M600/2-78-054 NV Modified Sobek Procedure		> 41.94			-			07/06/20 0:00	calc
Net Acid Generation Procedure	Sequential NAG - EGI 2002									
NAG		1	2		*	Kg H2SO4/t	1	1	02/13/20 0:00	jms
pH After Oxidation		1	6.5		*	units	0.1	0.1	02/13/20 0:00	jms
Net Neutralization Potential - NV Mod	M600/2-78-054 NV Modified Sobek Procedure		12.7			t CaCO3/Kt			07/06/20 0:00	calc
Neutralization Potential as CaCO3	M600/2-78-054 NV Modified Sobek Procedure	1	1.3		*	%	0.1	0.5	02/14/20 11:53	nnk
Potential Acid Generating Sulfur	M600/2-78-054 NV Modified Sobek Procedure		0.02			%	0.01	0.1	07/06/20 0:00	calc
Sulfur Forms	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc									
H2O-Soluble Sulfate		1	0.01	B	*	%	0.01	0.1	02/12/20 0:00	llr
HCl Rinse Residue		1	0.01	B	*	%	0.01	0.1	02/12/20 0:00	llr
HNO3 Rinse Residue		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Hot Water Rinse Residue		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Non-Extractable Sulfur		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Non-H2O Sulfate Sulfur		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Pyritic Sulfur		1	0.01	B	*	%	0.01	0.1	02/12/20 0:00	llr
Total Sulfur		1	0.01	B	*	%	0.01	0.1	02/12/20 0:00	llr

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				01/28/20 16:52	nnk
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				02/10/20 14:25	jms

Wood - E&I Solutions, Inc.
Project ID:
Sample ID: WRSB224_0.5-3

ACZ Sample ID: ***L57102-03***
Date Sampled: *01/21/20 09:30*
Date Received: *01/27/20*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		0.63	B		t CaCO3/Kt	0.31	3.1	07/06/20 0:00	calc
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		0.63	B		t CaCO3/Kt	0.31	3.1	07/06/20 0:00	calc
Acid Neutralization Potential (calc)	M600/2-78-054 3.2.3 NV Modified Sobek Procedure		16			t CaCO3/Kt	1	5	07/06/20 0:00	calc
ANP to AGP Ratio (calc)	M600/2-78-054 NV Modified Sobek Procedure		25.6			t CaCO3/Kt			07/06/20 0:00	calc
Net Acid Generation Procedure	Sequential NAG - EGI 2002									
NAG		1	<1	U	*	Kg H2SO4/t	1	1	02/13/20 0:00	jms
pH After Oxidation		1	6.9		*	units	0.1	0.1	02/13/20 0:00	jms
Net Neutralization Potential - NV Mod	M600/2-78-054 NV Modified Sobek Procedure		15.4			t CaCO3/Kt			07/06/20 0:00	calc
Neutralization Potential as CaCO3	M600/2-78-054 NV Modified Sobek Procedure	1	1.6		*	%	0.1	0.5	02/14/20 12:14	nnk
Potential Acid Generating Sulfur	M600/2-78-054 NV Modified Sobek Procedure		0			%	0.01	0.1	07/06/20 0:00	calc
Sulfur Forms	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc									
H2O-Soluble Sulfate		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
HCl Rinse Residue		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
HNO3 Rinse Residue		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Hot Water Rinse Residue		1	0.02	B	*	%	0.01	0.1	02/12/20 0:00	llr
Non-Extractable Sulfur		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Non-H2O Sulfate Sulfur		1	0.02	B	*	%	0.01	0.1	02/12/20 0:00	llr
Pyritic Sulfur		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Total Sulfur		1	0.02	B	*	%	0.01	0.1	02/12/20 0:00	llr

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				01/28/20 16:54	nnk
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				02/10/20 14:30	jms

Wood - E&I Solutions, Inc.
Project ID:
Sample ID: WRSB224_6-15

ACZ Sample ID: ***L57102-04***
Date Sampled: *01/21/20 09:44*
Date Received: *01/27/20*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		2.81	B		t CaCO3/Kt	0.31	3.1	07/06/20 0:00	calc
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		2.81	B		t CaCO3/Kt	0.31	3.1	07/06/20 0:00	calc
Acid Neutralization Potential (calc)	M600/2-78-054 3.2.3 NV Modified Sobek Procedure		15			t CaCO3/Kt	1	5	07/06/20 0:00	calc
ANP to AGP Ratio (calc)	M600/2-78-054 NV Modified Sobek Procedure		5.33			t CaCO3/Kt			07/06/20 0:00	calc
Net Acid Generation Procedure	Sequential NAG - EGI 2002									
NAG		1	<1	U	*	Kg H2SO4/t	1	1	02/13/20 0:00	jms
pH After Oxidation		1	6.7		*	units	0.1	0.1	02/13/20 0:00	jms
Net Neutralization Potential - NV Mod	M600/2-78-054 NV Modified Sobek Procedure		12.2			t CaCO3/Kt			07/06/20 0:00	calc
Neutralization Potential as CaCO3	M600/2-78-054 NV Modified Sobek Procedure	1	1.5		*	%	0.1	0.5	02/14/20 12:34	nnk
Potential Acid Generating Sulfur	M600/2-78-054 NV Modified Sobek Procedure		0.03			%	0.01	0.1	07/06/20 0:00	calc
Sulfur Forms	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc									
H2O-Soluble Sulfate		1	0.02	B	*	%	0.01	0.1	02/12/20 0:00	llr
HCl Rinse Residue		1	0.02	B	*	%	0.01	0.1	02/12/20 0:00	llr
HNO3 Rinse Residue		1	0.01	B	*	%	0.01	0.1	02/12/20 0:00	llr
Hot Water Rinse Residue		1	0.07	B	*	%	0.01	0.1	02/12/20 0:00	llr
Non-Extractable Sulfur		1	0.01	B	*	%	0.01	0.1	02/12/20 0:00	llr
Non-H2O Sulfate Sulfur		1	0.05	B	*	%	0.01	0.1	02/12/20 0:00	llr
Pyritic Sulfur		1	0.01	B	*	%	0.01	0.1	02/12/20 0:00	llr
Total Sulfur		1	0.09	B	*	%	0.01	0.1	02/12/20 0:00	llr

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				01/28/20 16:56	nnk
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				02/10/20 14:35	jms

Wood - E&I Solutions, Inc.
Project ID:
Sample ID: WRSB219_0.5-3

ACZ Sample ID: ***L57102-05***
Date Sampled: *01/21/20 11:04*
Date Received: *01/27/20*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		0.94	B		t CaCO3/Kt	0.31	3.1	07/06/20 0:00	calc
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		0.94	B		t CaCO3/Kt	0.31	3.1	07/06/20 0:00	calc
Acid Neutralization Potential (calc)	M600/2-78-054 3.2.3 NV Modified Sobek Procedure		18			t CaCO3/Kt	1	5	07/06/20 0:00	calc
ANP to AGP Ratio (calc)	M600/2-78-054 NV Modified Sobek Procedure		19.2			t CaCO3/Kt			07/06/20 0:00	calc
Net Acid Generation Procedure	Sequential NAG - EGI 2002									
NAG		1	<1	U	*	Kg H2SO4/t	1	1	02/13/20 0:00	jms
pH After Oxidation		1	7.0		*	units	0.1	0.1	02/13/20 0:00	jms
Net Neutralization Potential - NV Mod	M600/2-78-054 NV Modified Sobek Procedure		17.1			t CaCO3/Kt			07/06/20 0:00	calc
Neutralization Potential as CaCO3	M600/2-78-054 NV Modified Sobek Procedure	1	1.8		*	%	0.1	0.5	02/14/20 12:55	nnk
Potential Acid Generating Sulfur	M600/2-78-054 NV Modified Sobek Procedure		0.01			%	0.01	0.1	07/06/20 0:00	calc
Sulfur Forms	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc									
H2O-Soluble Sulfate		1	0.01	B	*	%	0.01	0.1	02/12/20 0:00	llr
HCl Rinse Residue		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
HNO3 Rinse Residue		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Hot Water Rinse Residue		1	0.02	B	*	%	0.01	0.1	02/12/20 0:00	llr
Non-Extractable Sulfur		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Non-H2O Sulfate Sulfur		1	0.02	B	*	%	0.01	0.1	02/12/20 0:00	llr
Pyritic Sulfur		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Total Sulfur		1	0.03	B	*	%	0.01	0.1	02/12/20 0:00	llr

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				01/28/20 16:58	nnk
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				02/10/20 14:41	jms

Wood - E&I Solutions, Inc.
Project ID:
Sample ID: WRSB219_6-15

ACZ Sample ID: ***L57102-06***
Date Sampled: *01/21/20 11:26*
Date Received: *01/27/20*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		0.31	B		t CaCO3/Kt	0.31	3.1	07/06/20 0:00	calc
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		0.31	B		t CaCO3/Kt	0.31	3.1	07/06/20 0:00	calc
Acid Neutralization Potential (calc)	M600/2-78-054 3.2.3 NV Modified Sobek Procedure		15			t CaCO3/Kt	1	5	07/06/20 0:00	calc
ANP to AGP Ratio (calc)	M600/2-78-054 NV Modified Sobek Procedure		> 48.39			-			07/06/20 0:00	calc
Net Acid Generation Procedure	Sequential NAG - EGI 2002									
NAG		1	<1	U	*	Kg H2SO4/t	1	1	02/13/20 0:00	jms
pH After Oxidation		1	7.2		*	units	0.1	0.1	02/13/20 0:00	jms
Net Neutralization Potential - NV Mod	M600/2-78-054 NV Modified Sobek Procedure		14.7			t CaCO3/Kt			07/06/20 0:00	calc
Neutralization Potential as CaCO3	M600/2-78-054 NV Modified Sobek Procedure	1	1.5		*	%	0.1	0.5	02/14/20 13:15	nnk
Potential Acid Generating Sulfur	M600/2-78-054 NV Modified Sobek Procedure		0.01			%	0.01	0.1	07/06/20 0:00	calc
Sulfur Forms	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc									
H2O-Soluble Sulfate		1	0.01	B	*	%	0.01	0.1	02/12/20 0:00	llr
HCl Rinse Residue		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
HNO3 Rinse Residue		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Hot Water Rinse Residue		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Non-Extractable Sulfur		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Non-H2O Sulfate Sulfur		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Pyritic Sulfur		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Total Sulfur		1	0.01	B	*	%	0.01	0.1	02/12/20 0:00	llr

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				01/28/20 17:00	nnk
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				02/10/20 14:46	jms

Wood - E&I Solutions, Inc.
Project ID:
Sample ID: WRSB220_0.5-3

ACZ Sample ID: ***L57102-07***
Date Sampled: *01/21/20 13:32*
Date Received: *01/27/20*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		0.63	B		t CaCO3/Kt	0.31	3.1	07/06/20 0:00	calc
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		0.63	B		t CaCO3/Kt	0.31	3.1	07/06/20 0:00	calc
Acid Neutralization Potential (calc)	M600/2-78-054 3.2.3 NV Modified Sobek Procedure		11			t CaCO3/Kt	1	5	07/06/20 0:00	calc
ANP to AGP Ratio (calc)	M600/2-78-054 NV Modified Sobek Procedure		17.6			t CaCO3/Kt			07/06/20 0:00	calc
Net Acid Generation Procedure	Sequential NAG - EGI 2002									
NAG		1	<1	U	*	Kg H2SO4/t	1	1	02/13/20 0:00	jms
pH After Oxidation		1	6.9		*	units	0.1	0.1	02/13/20 0:00	jms
Net Neutralization Potential - NV Mod	M600/2-78-054 NV Modified Sobek Procedure		10.4			t CaCO3/Kt			07/06/20 0:00	calc
Neutralization Potential as CaCO3	M600/2-78-054 NV Modified Sobek Procedure	1	1.1		*	%	0.1	0.5	02/14/20 13:36	nnk
Potential Acid Generating Sulfur	M600/2-78-054 NV Modified Sobek Procedure		0			%	0.01	0.1	07/06/20 0:00	calc
Sulfur Forms	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc									
H2O-Soluble Sulfate		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
HCl Rinse Residue		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
HNO3 Rinse Residue		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Hot Water Rinse Residue		1	0.03	B	*	%	0.01	0.1	02/12/20 0:00	llr
Non-Extractable Sulfur		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Non-H2O Sulfate Sulfur		1	0.03	B	*	%	0.01	0.1	02/12/20 0:00	llr
Pyritic Sulfur		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Total Sulfur		1	0.02	B	*	%	0.01	0.1	02/12/20 0:00	llr

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				01/28/20 17:02	nnk
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				02/10/20 14:51	jms

Wood - E&I Solutions, Inc.
Project ID:
Sample ID: WRSB220_6-15

ACZ Sample ID: ***L57102-08***
Date Sampled: *01/21/20 13:50*
Date Received: *01/27/20*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		0.94	B		t CaCO3/Kt	0.31	3.1	07/06/20 0:00	calc
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		0.94	B		t CaCO3/Kt	0.31	3.1	07/06/20 0:00	calc
Acid Neutralization Potential (calc)	M600/2-78-054 3.2.3 NV Modified Sobek Procedure		12			t CaCO3/Kt	1	5	07/06/20 0:00	calc
ANP to AGP Ratio (calc)	M600/2-78-054 NV Modified Sobek Procedure		12.8			t CaCO3/Kt			07/06/20 0:00	calc
Net Acid Generation Procedure	Sequential NAG - EGI 2002									
NAG		1	<1	U	*	Kg H2SO4/t	1	1	02/13/20 0:00	jms
pH After Oxidation		1	6.9		*	units	0.1	0.1	02/13/20 0:00	jms
Net Neutralization Potential - NV Mod	M600/2-78-054 NV Modified Sobek Procedure		11.1			t CaCO3/Kt			07/06/20 0:00	calc
Neutralization Potential as CaCO3	M600/2-78-054 NV Modified Sobek Procedure	1	1.2		*	%	0.1	0.5	02/14/20 13:56	nnk
Potential Acid Generating Sulfur	M600/2-78-054 NV Modified Sobek Procedure		0.01			%	0.01	0.1	07/06/20 0:00	calc
Sulfur Forms	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc									
H2O-Soluble Sulfate		1	0.01	B	*	%	0.01	0.1	02/12/20 0:00	llr
HCl Rinse Residue		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
HNO3 Rinse Residue		1	0.01	B	*	%	0.01	0.1	02/12/20 0:00	llr
Hot Water Rinse Residue		1	0.02	B	*	%	0.01	0.1	02/12/20 0:00	llr
Non-Extractable Sulfur		1	0.01	B	*	%	0.01	0.1	02/12/20 0:00	llr
Non-H2O Sulfate Sulfur		1	0.02	B	*	%	0.01	0.1	02/12/20 0:00	llr
Pyritic Sulfur		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Total Sulfur		1	0.03	B	*	%	0.01	0.1	02/12/20 0:00	llr

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				01/28/20 17:04	nnk
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				02/10/20 14:56	jms

Wood - E&I Solutions, Inc.
Project ID:
Sample ID: WRSB231_0.5-3

ACZ Sample ID: ***L57102-09***
Date Sampled: *01/21/20 14:55*
Date Received: *01/27/20*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		1.88	B		t CaCO3/Kt	0.31	3.1	07/06/20 0:00	calc
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		1.88	B		t CaCO3/Kt	0.31	3.1	07/06/20 0:00	calc
Acid Neutralization Potential (calc)	M600/2-78-054 3.2.3 NV Modified Sobek Procedure		11			t CaCO3/Kt	1	5	07/06/20 0:00	calc
ANP to AGP Ratio (calc)	M600/2-78-054 NV Modified Sobek Procedure		5.87			t CaCO3/Kt			07/06/20 0:00	calc
Net Acid Generation Procedure	Sequential NAG - EGI 2002									
NAG		1	3		*	Kg H2SO4/t	1	1	02/13/20 0:00	jms
pH After Oxidation		1	6.6		*	units	0.1	0.1	02/13/20 0:00	jms
Net Neutralization Potential - NV Mod	M600/2-78-054 NV Modified Sobek Procedure		9.13			t CaCO3/Kt			07/06/20 0:00	calc
Neutralization Potential as CaCO3	M600/2-78-054 NV Modified Sobek Procedure	1	1.1		*	%	0.1	0.5	02/14/20 14:38	nnk
Potential Acid Generating Sulfur	M600/2-78-054 NV Modified Sobek Procedure		0.01			%	0.01	0.1	07/06/20 0:00	calc
Sulfur Forms	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc									
H2O-Soluble Sulfate		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
HCl Rinse Residue		1	0.01	B	*	%	0.01	0.1	02/12/20 0:00	llr
HNO3 Rinse Residue		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Hot Water Rinse Residue		1	0.06	B	*	%	0.01	0.1	02/12/20 0:00	llr
Non-Extractable Sulfur		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Non-H2O Sulfate Sulfur		1	0.05	B	*	%	0.01	0.1	02/12/20 0:00	llr
Pyritic Sulfur		1	0.01	B	*	%	0.01	0.1	02/12/20 0:00	llr
Total Sulfur		1	0.06	B	*	%	0.01	0.1	02/12/20 0:00	llr

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				01/28/20 17:06	nnk
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				02/10/20 15:02	jms

Wood - E&I Solutions, Inc.
Project ID:
Sample ID: WRSB231_6-15

ACZ Sample ID: ***L57102-10***
Date Sampled: *01/21/20 15:04*
Date Received: *01/27/20*
Sample Matrix: *Soil*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		0.63	B		t CaCO3/Kt	0.31	3.1	07/06/20 0:00	calc
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		0.63	B		t CaCO3/Kt	0.31	3.1	07/06/20 0:00	calc
Acid Neutralization Potential (calc)	M600/2-78-054 3.2.3 NV Modified Sobek Procedure		18			t CaCO3/Kt	1	5	07/06/20 0:00	calc
ANP to AGP Ratio (calc)	M600/2-78-054 NV Modified Sobek Procedure		28.8			t CaCO3/Kt			07/06/20 0:00	calc
Net Acid Generation Procedure	Sequential NAG - EGI 2002									
NAG		1	<1	U	*	Kg H2SO4/t	1	1	02/13/20 0:00	jms
pH After Oxidation		1	7.3		*	units	0.1	0.1	02/13/20 0:00	jms
Net Neutralization Potential - NV Mod	M600/2-78-054 NV Modified Sobek Procedure		17.4			t CaCO3/Kt			07/06/20 0:00	calc
Neutralization Potential as CaCO3	M600/2-78-054 NV Modified Sobek Procedure	1	1.8		*	%	0.1	0.5	02/14/20 15:39	nnk
Potential Acid Generating Sulfur	M600/2-78-054 NV Modified Sobek Procedure		0.02			%	0.01	0.1	07/06/20 0:00	calc
Sulfur Forms	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc									
H2O-Soluble Sulfate		1	0.02	B	*	%	0.01	0.1	02/12/20 0:00	llr
HCl Rinse Residue		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
HNO3 Rinse Residue		1	0.01	B	*	%	0.01	0.1	02/12/20 0:00	llr
Hot Water Rinse Residue		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Non-Extractable Sulfur		1	0.01	B	*	%	0.01	0.1	02/12/20 0:00	llr
Non-H2O Sulfate Sulfur		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Pyritic Sulfur		1	<0.01	U	*	%	0.01	0.1	02/12/20 0:00	llr
Total Sulfur		1	0.02	B	*	%	0.01	0.1	02/12/20 0:00	llr

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				01/28/20 17:08	nnk
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				02/10/20 15:07	jms

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:
https://acz.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf

REP001.03.15.02

Wood - E&I Solutions, Inc.

ACZ Project ID: ***L57102***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Net Acid Generation Sequential NAG - EGI 2002

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG491704													
L57102-01DUP	DUP	02/13/20 13:23			1	1.2	‹g H2SO4/				18	20	RA

Neutralization Potential as CaCO3 M600/2-78-054 NV Modified Sobek Procedure

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG491658													
WG491658PBS	PBS	02/14/20 10:52				U	%		-0.2	0.2			
WG491658LCSS	LCSS	02/14/20 11:12	PCN59475	99.9		103	%	103	80	120			
L57102-09MS	MS	02/14/20 14:58	SI190303-1	1	1.1	1.95	%	85	70	130			
L57102-09DUP	DUP	02/14/20 15:19			1.1	1.13	%				3	20	

Sulfur Hcl Extractable M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proce

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG491527													
L57102-01DUP	DUP	02/12/20 16:51			.03	.04	%				29	20	RA

Sulfur Hno3 Extractable M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proce

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG491527													
L57102-01DUP	DUP	02/12/20 16:51			U	.01	%				200	20	RA

Sulfur Hot H2o Extractable M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proce

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG491527													
L57102-01DUP	DUP	02/12/20 16:51			.01	U	%				200	20	RA

Sulfur Hot H2o Residue M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proce

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG491527													
L57102-01DUP	DUP	02/12/20 16:51			.03	.05	%				50	20	RA

Sulfur Residual M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proce

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG491527													
L57102-01DUP	DUP	02/12/20 16:51			U	U	%				0	20	RA

Sulfur Total M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proce

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG491527													
L57102-01DUP	DUP	02/12/20 16:51			.04	.05	%				22	20	RA
L57102-01MS	MS	02/12/20 17:03	PCN60251	1.32	.04	1.28	%	94	80	120			
WG491527LCSS	LCSS	02/12/20 20:53	PCN60246	4.01		3.69	%	92	80	120			
WG491527PBS	PBS	02/12/20 21:04				U	%		-0.03	0.03			

Wood - E&I Solutions, Inc.

ACZ Project ID: ***L57102***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L57102-01	WG491527	H2O-Soluble Sulfate	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Hot Water Rinse Residue	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG491704	NAG	Sequential NAG - EGI 2002	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG491527	Non-Extractable Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Non-H2O Sulfate Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Pyritic Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Total Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
L57102-02	WG491527	H2O-Soluble Sulfate	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Hot Water Rinse Residue	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG491704	NAG	Sequential NAG - EGI 2002	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG491527	Non-Extractable Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Non-H2O Sulfate Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Pyritic Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Total Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
L57102-03	WG491527	H2O-Soluble Sulfate	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Hot Water Rinse Residue	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG491704	NAG	Sequential NAG - EGI 2002	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG491527	Non-Extractable Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Non-H2O Sulfate Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Pyritic Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Total Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

Wood - E&I Solutions, Inc.

ACZ Project ID: ***L57102***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L57102-04	WG491527	H2O-Soluble Sulfate	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Hot Water Rinse Residue	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG491704	NAG	Sequential NAG - EGI 2002	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG491527	Non-Extractable Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Non-H2O Sulfate Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Pyritic Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Total Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
L57102-05	WG491527	H2O-Soluble Sulfate	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Hot Water Rinse Residue	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG491704	NAG	Sequential NAG - EGI 2002	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG491527	Non-Extractable Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Non-H2O Sulfate Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Pyritic Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Total Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
L57102-06	WG491527	H2O-Soluble Sulfate	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Hot Water Rinse Residue	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG491704	NAG	Sequential NAG - EGI 2002	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG491527	Non-Extractable Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Non-H2O Sulfate Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Pyritic Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Total Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

Wood - E&I Solutions, Inc.

ACZ Project ID: ***L57102***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L57102-07	WG491527	H2O-Soluble Sulfate	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Hot Water Rinse Residue	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG491704	NAG	Sequential NAG - EGI 2002	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG491527	Non-Extractable Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Non-H2O Sulfate Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Pyritic Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Total Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
L57102-08	WG491527	H2O-Soluble Sulfate	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Hot Water Rinse Residue	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG491704	NAG	Sequential NAG - EGI 2002	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG491527	Non-Extractable Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Non-H2O Sulfate Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Pyritic Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Total Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
L57102-09	WG491527	H2O-Soluble Sulfate	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Hot Water Rinse Residue	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG491704	NAG	Sequential NAG - EGI 2002	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG491527	Non-Extractable Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Non-H2O Sulfate Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Pyritic Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Total Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

Wood - E&I Solutions, Inc.

ACZ Project ID: ***L57102***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L57102-10	WG491527	H2O-Soluble Sulfate	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Hot Water Rinse Residue	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG491704	NAG	Sequential NAG - EGI 2002	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG491527	Non-Extractable Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Non-H2O Sulfate Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Pyritic Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Total Sulfur	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Proc	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

Soil Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.	
NAG	Sequential NAG - EGI 2002
Neutralization Potential as CaCO3	M600/2-78-054 NV Modified Sobek Procedure
pH After Oxidation	Sequential NAG - EGI 2002
Sulfur HCl Extractable	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Procedure
Sulfur HNO3 Extractable	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Procedure
Sulfur Hot H2O Extractable	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Procedure
Sulfur Residual	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Procedure
Sulfur Total	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Procedure

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
NAG	Sequential NAG - EGI 2002
Neutralization Potential as CaCO3	M600/2-78-054 NV Modified Sobek Procedure
pH After Oxidation	Sequential NAG - EGI 2002
Sulfur HCl Extractable	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Procedure
Sulfur HNO3 Extractable	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Procedure
Sulfur Hot H2O Extractable	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Procedure
Sulfur Residual	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Procedure
Sulfur Total	M600/2-78-054 3.2.4 & 3.2.6 NV Modified Sobek Procedure

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Wood - E&I Solutions, Inc.

ACZ Project ID: L57102
Date Received: 01/27/2020 11:33
Received By:
Date Printed: 1/27/2020

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?		X	
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]			X
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

NA indicates Not Applicable

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
UNKNOWN		NA		

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Wood - E&I Solutions, Inc.

ACZ Project ID:	L57102
Date Received:	01/27/2020 11:33
Received By:	
Date Printed:	1/27/2020

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

L57102

L57102 Chain of Custod

A BP affiliated company

Laboratory Management Program LaMP Chain of Custody Record

~~L57096~~ DEW 1/27/20

BP/ARC Site Node Path: NV_YERINGTON

BP/ARC Facility Name: Anaconda Copper Mine Site

Req Due Date (mm/dd/yy):

Rush TAT: Yes ___ No X

Lab Work Order Number:

Lab Name: ACZ Laboratories, Inc.	BP/ARC Facility Address: 1 Austin Circle	Consultant/Contractor: Wood - E&I Solutions, Inc.
Lab Address: 2773 Downhill Dr, Steamboat Springs, CO, 80487	City, State, ZIP Code: Yerington, Nevada	Consultant/Contractor Project No: SA18170340.005.055B
Lab PM: Sue Webber (suew@acz.com)	Lead Regulatory Agency: NDEP Abandoned Mine Lands Program	Address: 10940 White Rock Rd, Ste 190, Rancho Cordova, CA 95670
Lab Phone: 970-879-6590	California Global ID No.:	Consultant/Contractor PM: Kent Parrish
Lab Shipping Accnt: 2897-1804-4 (RC #)	Enfos Proposal No: Work Release No:	Phone: 916-636-3200 Email: Kent.Parrish@woodplc.com
Lab Bottle Order No:	Accounting Mode: Provision ___ OOC-BU ___ OOC-RM ___	Email Report/EDD To: lynda.lombardi@woodplc.com
Other Info: OU-4b_OU-5_Soil	Stage: Activity:	Invoice To: BP/ARC ___ Contractor X
BP/ARC EBM: Chuck Stilwell		
EBM Phone: 713-998-2443		
EBM Email: Chuck.Stilwell@bp.com		

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Acid Base Account/ Sulfur Forms	Net Acid Generation	LD	Comments
	WRSB206_25-35	1/21/20	1152	X			1	1				X	X		
1	WRSB206_65-75	1/21/20	1342	X			1	1				X	X		
2	WRSB206_105-115	1/21/20	1506	X			1	1				X	X		

BJ 1/22/20

Report Type & QC Level: Standard X; Full Data Package ___

Comments — Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

Sampler's Name: Bryce Johnson

Sampler's Company: Wood

Shipment Method: Fed Ex Ship Date: 1/22/20

Shipment Tracking No: see attached sheet

Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
[signature] / Wood	1/22/20	800	[signature] / Wood	1/22/20	900
[signature] / Wood	1/22/20	1300	[signature]	1/24/20	1100

Special Instructions: Use NV approved protocols

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No | Temp Blank: Yes / No | Cooler Temp on Receipt: ______ °F/C | Trip Blank: Yes / No | MS/MSD Sample Submitted: Yes / No

L57102 L57096

Atlantic Richfield Company A BP affiliated company

Laboratory Management Program LaMP Chain of Custody Record

BP/ARC Site Node Path: NV_YERINGTON
BP/ARC Facility Name: Anaconda Copper Mine Site
Req Due Date (mm/dd/yy):
Rush TAT: Yes ___ No X
Lab Work Order Number:

Lab Name: ACZ Laboratories, Inc.	BP/ARC Facility Address: 1 Austin Circle	Consultant/Contractor: Wood - E&I Solutions, Inc.	
Lab Address: 2773 Downhill Dr, Steamboat Springs, CO, 80487	City, State, ZIP Code: Yerington, Nevada	Consultant/Contractor Project No: SA18170340.005.055B	
Lab PM: Sue Webber (suew@acz.com)	Lead Regulatory Agency: NDEP Abandoned Mine Lands Program	Address: 10940 White Rock Rd, Ste 190, Rancho Cordova, CA 95670	
Lab Phone: 970-879-6590	California Global ID No.:	Consultant/Contractor PM: Kent Parrish	
Lab Shipping Accnt: 2897-1804-4 (RC #)	Enfos Proposal No: Work Release No:	Phone: 916-636-3200	Email: Kent.Parrish@woodplc.com
Lab Bottle Order No:	Accounting Mode: Provision ___ OOC-BU ___ OOC-RM ___	Email Report/EDD To: lynda.lombardi@woodplc.com	
Other Info: OU-4b_OU-5_Soil	Stage: Activity:	Invoice To: BP/ARC ___	Contractor X
BP/ARC EBM: Chuck Stilwell		Report Type & QC Level: Standard X	
EBM Phone: 713-998-2443		Full Data Package ___	
EBM Email: Chuck.Stilwell@bp.com			

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Water / Liquid	Air / Vapor		No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl		Requested Analyses: Acid Base Account/ Sulfur Forms	Net Acid Generation								LD	Comments
	WRSB224_0.5-3	1/21/20	0930	X				1	1					X	X									
	WRSB224_6-15	1/21/20	0944	X				1	1					X	X									
	WRSB219_0.5-3	1/21/20	1104	X				1	1					X	X									
	WRSB219_6-15	1/21/20	1126	X				1	1					X	X									
	WRSB220_0.5-3	1/21/20	1332	X				1	1					X	X									
	WRSB220_6-15	1/21/20	1350	X				1	1					X	X									
	WRSB231_0.5-3	1/21/20	1455	X				1	1					X	X									
	WRSB231_6-15	1/21/20	1504	X				1	1					X	X									

[signature] 1/21/20

Comments — Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: Rachael Klier	[signature] / WOOD	1/22/20	800	[signature] / Wood	1/22/20	900
Sampler's Company: Wood	[signature] / Wood	1/22/20	1300	[signature]	1/24/20	1020
Shipment Method: Fed Ex Ship Date: 1/22/20						
Shipment Tracking No: see attached sheet						

Special Instructions: Use NV approved protocols

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No | Temp Blank: Yes / No | Cooler Temp on Receipt: ______ °F/C | Trip Blank: Yes / No | MS/MSD Sample Submitted: Yes / No